

**TRANSLATION**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>B-14863 PCT</b>	<b>FOR FURTHER ACTION</b>	See Form PCT/IPEA/416
International application No. <b>PCT/IB2004/003795</b>	International filing date ( <i>day/month/year</i> ) <b>19.11.2004</b>	Priority date ( <i>day/month/year</i> ) <b>20.11.2003</b>
International Patent Classification (IPC) or national classification and IPC <b>C23C16/50, B05D7/24</b>		
Applicant <b>APIT CORP. SA</b>		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> ( <i>sent to the applicant and to the International Bureau</i> ) a total of <u>3</u> sheets, as follows: <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> ( <i>sent to the International Bureau only</i> ) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. I

## Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-23 as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- nos. \_\_\_\_\_ as originally filed/furnished
- nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- nos.\* 1-11 received by this Authority on 09.06.2005 with letter of 30.05.2005
- nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the drawings:
- sheets 1/8-8/8 as originally filed/furnished
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☒ The amendments have resulted in the cancellation of:
- ☐ the description, pages \_\_\_\_\_
- ☒ the claims, nos. 12
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1, 9-11	YES
	Claims	2-8	NO
Inventive step (IS)	Claims	9-11	YES
	Claims	1-8	NO
Industrial applicability (IA)	Claims	1-11	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
<p>Reference is made to the following documents:</p> <p>D1: US-A-5 677 010 (ESSER ET AL) 14 October 1997 (1997-10-14)</p> <p>D2: WO 02/23960 A (SIGMA TECHNOLOGIES INTERNATIONAL, INC) 21 March 2002 (2002-03-21)</p> <p>D3: US 2003/104141 A1 (AMATO-WIERDA CARMELA C ET AL) 5 June 2003 (2003-06-05)</p> <p>D4: WO 00/47798 A (L'AIR LIQUIDE, SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROC) 17 August 2000 (2000-08-17)</p>			
1. METHOD CLAIMS 1 TO 8			
<p>D1, which is considered to be the prior art closest to the subject matter of claim 1, describes (see the references in the international search report):</p> <p>A method and a device for depositing a polymer film onto a substrate by plasma polymerisation in a low pressure chamber.</p> <p>Consequently, the subject matter of claim 1 differs essentially from the teaching of D1 in</p>			

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	<p>that deposition is carried out at atmospheric pressure.</p> <p>The subject matter of claims 1 to 8 is therefore novel (PCT Article 33(2)).</p> <p>The problem that the present invention is intended to solve can be considered to be that of providing a method and a device suitable for depositing an impervious polymer film under conditions enabling mass-produced objects to be treated.</p> <p>The production of a plasma at atmospheric pressure is well known to a person skilled in the art, for example from documents D2 to D4 (see the references in the international search report). The solution to this problem, as proposed in independent claim 1, is therefore not considered to involve an inventive step (PCT Article 33(3)).</p> <p>Moreover, the amendment of claim 1 according to which "the flow rate of precursor gases is controlled to optimise the rate of film deposition and the level of the barrier to gas and liquid of the film" gives rise to a lack of clarity according to PCT Article 6. Indeed, the subject matter for which protection is sought has not been clearly defined. The claim attempts to define the method by the result to be achieved, yet this merely amounts to stating the basic problem the invention is intended to solve, without providing the technical features required "to optimise the</p>

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	<p>rate of film deposition and the level of the barrier to gas and liquid of the film".</p> <p>Furthermore, the application fails to meet the requirements of PCT Article 5 according to which the description should describe the invention in a manner sufficiently clear and complete for the invention to be carried out by a person skilled in the art. Indeed, no indication in the description enables a person skilled in the art to optimise the rate of film deposition and the level of the barrier to gas and liquid of the film.</p> <p>Dependent claims 2 to 8 contain no features which, when combined with the features of any one of the claims to which they refer, meet the PCT requirements of inventive step (PCT Article 33(2) and (3)).</p> <p>2. INDEPENDENT CLAIM 9</p> <p>Documents D2 to D4 describe (see the references in the international search report):</p> <p>Plasma deposition devices for depositing a thin film on the surface of objects travelling past. Said devices all include plasma generators operating at atmospheric pressure, systems for supplying at least one precursor gas and a conveyor-belt-type drive system for conveying the objects to be treated through the plasma flow. The subject matter of independent claim 9 therefore differs essentially from the devices according to</p>

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	<p>D2 to D4 in that the conveyor belt is of the mesh or grid type. The aim of using of such a conveyor belt is to enable surface treatment over the entire periphery of the object to be treated. Alternatively, in the instance of treating nanoparticles, D2 proposes using a vibrator to agitate the particles. The solution proposed in claim 9 is suitable for treating objects of larger size than nanoparticles and cannot be deduced from the available documents. Consequently, the subject matter of claim 9 is considered to involve an inventive step within the meaning of PCT Article 33(3).</p> <p>3. INDEPENDENT CLAIM 10</p> <p>In the light of the teaching of D2 to D4 (see §2 above), the subject matter of independent claim 10 differs essentially from the devices according to D2 to D4 in that the objects to be treated are driven through the plasma flow by gravity or by a hydrodynamic flow. Such a drive system enabling treatment of the entire periphery of the objects to be treated cannot be deduced from teaching of the available documents. Consequently, the subject matter of claim 10 and corresponding dependent claim 11 is considered to involve an inventive step within the meaning of PCT Article 33(3).</p>